



DUPONT™ TEMPRION™ OHS

ORGANIC HEAT SPREADER

DESCRIPTION

DuPont™ Temprion™ OHS is a flexible, all-polymeric heat spreader film comprising a heat-spreading core coated with a thermally conductive adhesive on one or both sides. Temprion™ OHS possesses exceptional in-plane thermal conductivity that is 250x greater than its through-plane thermal conductivity. This high ratio enables uniform heat distribution across a substrate, while maintaining thermal insulation of the substrate.

The organic nature of Temprion™ OHS provides inherent electrical insulation, eliminating the need for a coverlay to protect sensitive electronics from the electrically conductive flakes associated with traditional graphite-based heat spreaders. The flexibility of the material enables unique 3D applications.

APPLICATIONS

- Heat spreader/pipe
- Displays
- Power electronics
- Battery cell isolation
- Package wrap

FEATURES

- High in-plane thermal conductivity
- Low through-plane thermal conductivity
- Electrically insulating
- Flexible
- High mechanical integrity
- UL 94 V-0 flammability rating (pending)

Table 1 – Typical Properties of DuPont™ Temprion™ OHS Film

Property	OHS	Test Method
Thermal Conductivity		
In-plane (machine direction), W/m•K	50	Angstrom Method
In-plane (transverse direction), W/m•K	0.2	Angstrom Method
Through-plane, W/m•K	0.2	ASTM D5470
Young's Modulus (machine direction), GPa	140	ASTM E494
Young's Modulus (transverse direction), GPa	3	ASTM E494
Tensile Strength* (machine direction), GPa	2	ASTM D7744
Elongation to Break* (machine direction), %	2.1	ASTM D7744
Dielectric Strength, kV/mil	2.0	ASTM D149
Dielectric Constant, @ 1 MHz	2.2	ASTM D150
Surface Resistivity, Ω•cm	> 10 ¹⁵	ASTM D257
Volume Resistivity, Ω•cm	> 10 ¹⁵	ASTM D257
Operating Temperature, °C	-20 – 140	N/A
Flammability	Non-flammable	UL94
RoHS Compliant	Yes	N/A

*Tensile strength and Elongation to break in the transverse direction cannot be measured due to splitting of material

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